

CLAIMS

1. In a process for treating negatively charged fly ash particles with unacceptably high levels of carbon which cannot be economically used as an additive for cement comprising turbulently subjecting in a gas stream in a venturi containing said negatively charged fly ash particles with
5 unacceptably high levels of carbon to an ozone generator comprising an insulator having thereon a metal surface which has at least one metallic sharp-tipped component disposed thereon and wherein the ozone generator produces ozone through corona discharge causing pacification of the fly ash with unacceptably high levels of carbon so that the fly ash can be efficiently used as an additive for cement, the improvement wherein said metallic sharp-tipped component is placed in a gas stream
10 within a venturi to produce added speed to produce an enhanced corona discharge.

2. The process of claim 1 wherein the fly ash with unacceptably high levels of carbon was manufactured by a triboelectric carbon separation process to remove carbon from the fly ash but the carbon level of the fly ash still remains excessively high

3. The process of claim 1 wherein the ozone is produced by corona discharge in an exhaust
15 tube.

4. A method for supplying ozone to fly ash with excessively high levels of carbon in the gas stream resulting from combustion of fuel comprising employing a venturi in the gas stream to produce a corona discharge resulting in ozone generation in said gas stream thereby producing an ozone treated fly ash product requiring less air entrainment agent to produce an acceptable product
20 for addition to cement in the manufacture of concrete.

5. The process of claim 4 wherein the fly ash is produced by a triboelectric process.

6. An electrostatic device for producing ozone through corona discharge comprising, at least one metallic sharp-tipped component mounted on a metallic surface which in turn is mounted on an insulator all of which are mounted in a venturi, and wherein the electrostatic device can be used in a path of negatively charged fly ash to produce ozone.

5 7. The electrostatic device of claim 6 wherein the metallic surface is cylindrical and the metal-tipped component surrounds the cylindrical surface.

8. The electrostatic device of claim 6 wherein the metallic sharp-tipped component is a spike coming to a sharp point or a wire coming to a sharp point.

10 9. The electrostatic device of claim 6 disposed in a pipe receiving a stream of negatively charged fly ash and wherein a baffle has been placed up-stream of the electrostatic device to prevent fly ash abrasion of the metal components of electrostatic device.

15 10. In combination an electrostatic device used in the production of ozone comprising a metal surface having at least one metallic sharp-tipped component on the surface thereof mounted in a non-metallic pipe having a venturi and used in said pipe to produce ozone through corona discharge.

20 11. In a device through which charged particles of fly ash with unacceptably high levels of carbon can flow comprising a channel with a venturi containing therein a metal plate having a flat surface with at least one metal spike on said flat surface capable of producing ozone through corona discharge when negatively charged fly ash particles with carbon impinge said metal spike on the flat surface of the metal plate.

12. In the device of claim 11 wherein the metal plate is supported on an insulated base so that the metal plate, having at least one spike thereon, can be placed in a pipe and such that negatively charged carbon containing fly ash particles impinge the plate, a corona discharge producing ozone will contact and pacify the carbon containing fly ash.

5 13. In a device through which negatively charged particles of fly ash with unacceptably high levels of carbon can flow comprising a channel with a venturi containing therein a metal plate with a flat surface having affixed on said flat surface a series of wires or spikes capable of producing ozone through corona discharge when said negatively charged particles impact said series of wires or spikes.